

National Formosa University Department of Power Mechanical Engineering
Curriculum For Four-Year Program
(Applicable to students admitted in the 114th Academic Year)

Academic Year	1st Academic Year				2nd Academic Year				3rd Academic Year				4th Academic Year				Subtotal	Total
	1st Semester		2nd Semester		1st Semester		2nd Semester		1st Semester		2nd Semester		1st Semester		2nd Semester			
Semester	Course Name	Credits/ Hours	Course Name	Credits/ Hours	Course Name	Credits/ Hours	Course Name	Credits/ Hours	Course Name	Credits/ Hours	Course Name	Credits/ Hours	Course Name	Credits/ Hours	Course Name	Credits/ Hours	Credits	
School Common Compulsory Courses	Chinese(1)	2 2	Lectures for General Education	1 2	Physical Education(3)	0 2	Physical Education(4)	0 2	General Education (6)	2 2	General Education (7)	2 2					27	
	Physical Education(1)	0 2	Chinese(2)	2 2	Advanced English Reading(1)	2 2	Advanced English Reading (2)	2 2										
	English (1)	2 2	Physical Education(2)	0 2	General Education (2)	2 2	Advanced English Reading(2)	2 2										
			English(2)	2 2	General Education (3)	2 2	General Education (4)	2 2										
Subtotal		6 8		5 8		2 4		4 6										
College Core Compulsory Courses	Calculus(1-1)	1 1	Calculus(2-4)	1 1	Engineering Mathematics (1)	3 3	Mechanics of Material(1)	3 3			Special Projects (—)	2 3	Sepecial Projects 2	2 3			30	
	Calculus(1-2)	1 1	Calculus(2-5)	1 1														
	Calculus(1-3)	1 1	Calculus(2-6)	1 1														
	Programming Languages	2 3	Electric Circuit Theory	3 3														
	Statics	3 3	Physics(2)	3 3														
Subtotal		11 12		9 9		3 3		3 3			2 3		2 3			76		
Department Professional Compulsory Courses	Introduction to Power Mechanics and Engineering Ethics	1 2	Computer Aided Drawing	1 3	Thermodynamics(1)	3 3	Computer Numerical Control Machine and Practice	1 3	Measurement Lab.	1 3	Heat Transfer	3 3	Thermal Engineering Laboratory	1 3			46	
	Mechanical Manufacturing Practice	3 3	Machinery Manufacturing Practice	1 3	Mechanisms	3 3	Applied Electronics Lab.	1 3	English for Specific Purposes	2 2	Automatic Control	3 3	Experiment of Fluid Mechanics	1 3				
			Mechanics for Engineering-dynamics	3 3	Applied Electronic	3 3	Material Science	3 3	Mechanical Element Design (1)	3 3			Mechatronic System	3 3				
							Engineering Mathematics(2)	3 3	Fluid Mechanics	3 3								
Subtotal		4 5		5 9		9 9		8 12		9 11		6 6		5 9				
Department Professional Elective Courses	I		An Introduction of Engery	3 3			Thermodynamics (2)	3 3	Building Environmental Control Practices	3 3	Lubrication Science	3 3					A minimum of 6 credits from any single option (I, II, or III) within the Department Professional Elective Courses.	
	II				Six Sigma Methodology	3 3	Nontraditional Machining	3 3	Introduction of Transmission	3 3	Mechanical Element Design(2)	3 3	Precision Engineering Practice	3 3				
	III		Computer Prgramming for Mechatronic System	3 3	Electrical Engineering	3 3	Practice of Internet of Things	3 3	Electric Machines	3 3	Man-machine interface	3 3	Pneusnatics and Hydraulics	3 3	Mechatronics practice	3 3		
	Other	Introduction to Nano Technology	2 2	Introduction to Medical Engineering	3 3	Computer Aided Circuits Design	2 2	Creative Thinking Skill	3 3	Creative Engineering Design	3 3	Novel Medical Assistive Mechanism Design	3 3	Introduction of Electronic Equipment Cooling	3 3	Transmission System Design		3 3
		Scientific English Reading	2 2	Plant Management	2 2	Quality Engineering	3 3	Air Pollution and Its Prevention	3 3	Digital Electronics	2 2	Creative Mechanism Design	3 3	Electronic Circuits Analysis	3 3	CNC Machine Tools Design and Manufacture		3 3
		Filing and Protection of Intellection Property	2 2	Analysis of High-tech Industry	3 3	Optical measurement	3 3	Dynamics of Machinery	3 3	Computer-Aided Manufacturing and Laboratory	2 4	Principles of Generator Design	3 3	Gear Design and Manufacture	3 3	Driving force factory		3 3
		Chemistry	3 3	Foundation optics and part application	3 3			3D Printing Practice	3 3	Mechanics of Materials(2)	3 3	Introduction of advanced automotive	3 3	Sequential control	3 3	Experimental Mechanics		3 3
		Workshop Practice	3 3	Nanometer engineering technology	3 3			Machine learning	3 3	Vibration	3 3	experiment design optimization	3 3	The Structural Design of Machine Tools	3 3	Fuzzy Control Practice		3 3
		Engineering Graphics	3 3	An Introduction To Artificial Intelligence	3 3			Automation Equipment Programming Practice	3 3	Fundamental of Micro Electric Mechanical System	3 3	Fuzzy Control	3 3	Introduction to Jet Engine	3 3	Failure analysis of refrigeration and air-conditioning system		3 3
				High-tech Factory Affairs	3 3			Computer-assisted mechanism design	3 3	Introduction to Reliability Engineering	3 3	Practical Pneumatic Circuit Design	3 3	Technical English writing	3 3	Semester Off-Campus Internship (4)		3 3
Subtotal		11 11		38 38		20 20		40 41		37 39		42 42		44 44		38 38		
Other	Social Responsibility Practice Education(practice)	2 2	All-out Defense Education Military Training (2)	1 2	All-out Defense Education Military Training (3)	1 2	All-out Defense Education Military Training (4)	1 2										
Note	<p>1. The minimum graduation credit is 132 credits 6, which includes 27 credits for School Common Compulsory Courses , 30 credits for College Core Compulsory Courses , 46 credits for Department Professional Compulsory Courses , and at least 29 credits for Department Professional Elective Courses.</p> <p>2. The graduation credits must include at least 6 credits from one of the following Department Professional Elective Course options: I (Thermal Fluid Machinery and Energy Technology), II (Transmission System Design and Manufacturing), or III (Mechatronics Engineering and Biomedical Mechanical Applications).</p> <p>3. Students must complete 6 credits of inter-college courses before graduation. Inter-college courses include micro-credit courses, self-directed learning, and cross-disciplinary learning credit courses. A maximum of 9 credits from professional courses outside the department (including inter-college courses, excluding common compulsory courses) may be counted.</p> <p>4. The All-out Defense Education Military Training courses do not count towards graduation credits.</p> <p>5. For students who complete a program (minor/concentration), the number of inter-departmental or inter-college program elective credits may be recognized up to 18 credits with prior approval from the department head.</p> <p>6. Passing and completing the "Social Responsibility Practice Education" is required to fulfill this graduation requirement²⁷. First-year students must select one school-level elective course according to this curriculum table, which can be counted towards outside-department electives and graduation credits²⁸. A maximum of two courses can be recognized for the 6 inter-college credits²⁹. Course credit transfers are handled according to the school's Credit Transfer Guidelines, and the lower credit amount will be recognized after transfer³⁰.</p> <p>7. International Students of NFU are required to take "Mandarin (1)" and "Mandarin (2)" courses, for more details please refer to "Mandarin Course Requirements for NFU International Students"</p> <p>8. Calculus courses are divided into sectional modules as follows: A. Calculus (I)-(1) and Calculus (II)-(4): Weeks 1–6 B. Calculus (I)-(2) and Calculus (II)-(5): Weeks 7–12 C. Calculus (I)-(3) and Calculus (II)-(6): Weeks 13–18</p>																	